CLAIMS

What is claimed is:

1. A power system comprising:

a plurality of power sources coupled in parallel to a first bus having a polarity and a second bus having an opposing polarity;

a third bus; and

a plurality of sensing elements, each sensing element in the plurality of sensing elements corresponding to one of the power sources in the plurality of power sources, each sensing element coupled to the third bus, and configured to allow sensing of power demanded by a load from the corresponding power source,

and each power source configured to sense power demanded from it by the load, and supply power to the load in response thereto.

2. The system of claim 1 wherein at least one of the power sources in the plurality of power sources is a DC power source.

3. The system of claim 2 wherein the at least one DC power source comprises a metal/air fuel cell.

4. The system of claim 1 wherein at least one of the power sources in the plurality of power sources is an AC power source.

5. The system of claim 1 wherein two or more of the power sources in the plurality of power sources have different power capacities.

6. The system of claim 1 wherein at least one of the power sources is configured to contribute power to the third bus responsive to a signal derived from the corresponding sensing element.

7. The system of claim 6 wherein at least one of the power sources regulates its power by means of a regulator circuit.

8. The system of claim 1 wherein at least one of the sensing elements is internal to its corresponding power source.

9. The system of claim 1 wherein at least one of the sensing elements in the plurality of sensing elements comprises a resistor coupled between the third bus and either the first and second busses.

10. The system of claim 9 wherein a power source senses the power demanded from it by the load in the form of a common voltage drop between the third bus and either of the first and second busses, and the value of the resistance of its corresponding resistor.

11. The system of claim 10 wherein the power source senses the common voltage drop from an arbitrary location between the third bus and either of the first and second busses.

12. The system of claim 9 wherein the resistor has a resistance which is inversely proportional to the power capacity of its corresponding power source.

13. The system of claim 1 wherein at least one sensing element in the plurality of sensing elements provides an impedance between busses that is inversely proportional to a power capacity of the power source, the power source corresponding to the at least one sensing element.

14. The system of claim 13 wherein the at least one sensing element comprises an inductive current transducer.

15. The system of claim 13 wherein the at least one sensing element comprises a Hall Effect current transducer.

16. The system of claim 1 wherein each of the power sources has a power capacity and each of the sensing elements provides an impedance between busses that is inversely proportional to the power capacity of its corresponding power source, whereby each sensing element senses power demanded by the load in proportion to the power capacity of its corresponding power source.

17. The system of claim 16 wherein each power source supplies a portion of current demanded by the load such that a ratio of the power capacities of any two of the power sources is substantially equivalent to a ratio of the portions of load current supplied by the same two sources.

18. The system of claim 1 wherein at least one power source of the plurality of power sources further comprises an interlock that interrupts current flow through the current sensing element corresponding to the at least one power source, responsive to a power failure of the at least one power source.

19. The system of claim 18 wherein the interlock disconnects the at least one power source from the load, responsive to a power failure of the at least one power source.

20. A method of delivering power to a load from a plurality of power sources coupled in parallel comprising:

individually sensing at each of the power sources power demanded by a load; and

individually contributing power to the load from each of the power sources responsive to the power demand as sensed at the power source.

21. The method of claim 20 wherein at least one of the power sources in the plurality of power sources is a DC power source.

22. The method of claim 21 wherein the at least one DC power source comprises a metal/air fuel cell.

23. The method of claim 20 wherein at least one of the power sources in the plurality of power sources is an AC power source.

24. The method of claim 20 wherein two or more of the power sources have different power capacities, and the individual contributing step comprises contributing from each of the power sources current in direct proportion to a ratio of the power capacity of the contributing power source to a total power capacity of all of the power sources.

25. The method of claim 20 wherein the individual contributing step further comprises contributing current from each of the power sources responsive to a signal derived from the current sensed at the power source.

26. The method of claim 25 further comprising providing a current sensing element internal to at least one power source.

27. The method of claim 26 wherein at least one of the current sensing elements comprises a resistor.

28. The method of claim 27 wherein the resistor enables sensing of current in the form of a common voltage drop.

29. The method of claim 28 wherein the resistor has a resistance which is inversely proportional to the power capacity of the power source containing the resistor.

30. The method of claim 26 wherein at least one of the current sensing elements provides an impedance between busses that is inversely proportional to the power capacity of the at least one power source.

31. The method of claim 30 wherein the at least one current sensing element comprises an inductive current transducer.

32. The method of claim 30 wherein the at least one current sensing element comprises a Hall Effect current transducer.

33. The method of claim 20 wherein the sensing step further comprises sensing magnitude and phase of current demanded by the load.

34. The method of claim 33 further comprising regulating current contributed from at least one of the power sources responsive to a signal derived from the magnitude of current sensed at the at least one power source.

35. The method of claim 33 further comprising regulating current contributed from at least one of the power sources responsive to a signal derived from the phase of current sensed at the at least one power source.

36. The method of claim 33 further comprising regulating current contributed from at least one of the power sources responsive to a signal derived from the magnitude and phase of current sensed at the at least one power source.

37. A method of delivering power to a load from a plurality of power sources coupled in parallel to first and second busses, comprising:

providing a power sensing element corresponding to each of the power sources and coupled to a third bus;

individually sensing power demanded by the load from each of the power sources ;

individually deriving one or more control signals at each of the power sources responsive to the power demanded by the load from that power source; and

individually contributing power from each power source responsive to the control signal corresponding to the power source.

38. The method of claim 37 further comprising individually sensing current demanded by the load from each of the power sources, wherein each of the power sensing elements comprises a current sensing element.

39. The method of claim 38 wherein the current from each of the power sources has a magnitude, and the sensing step comprises individually sensing the magnitude of the current demanded from each of the power sources.

40. The method of claim 38 wherein the current from each of the power sources has a magnitude and phase, and the sensing step comprises individually sensing the phase of the current demanded from each of the power sources.

41. The method of claim 38 wherein the current from each of the power sources has a magnitude and phase, and the sensing step comprises individually sensing the magnitude and phase of the current demanded from each of the power sources.

42. The method of claim 38 further comprising providing at least one of the power sources with an interlock that interrupts current flow through the current sensing element corresponding to the at least one power source responsive to a power failure of the at least one power source.

43. The method of claim 42 wherein the interlock disconnects the at least one power source from the load responsive to a power failure of the at least one power source.